

**TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT NO. 46935**

I. INTRODUCTION

This Class II Minor Source Air Quality Control Permit is for the operation of the Renegy LLC shavings plant in Snowflake, Navajo County, Arizona.

A. Company Information

Facility Address: 4764 AZ Highway 277
Snowflake, AZ 85937

Mailing Address: 301 W. Warner Road, Suite 132
Tempe, AZ 85284

II. PROCESS DESCRIPTION

The Renegy facility produces wood shavings that are cut, dried, and bagged on site. Wood logs are delivered on site and processed by two mills for either wet or dry logs. The wet shavings from the green log shavings mill are conveyed to a 20 MMBtu/hr dryer. The exhaust of the dryer passes through a mechanical cyclone which separates the dried product shavings from the gas stream. The dried product shavings are then loaded into hoppers for later bagging.

III. EMISSIONS

The emissions calculations for the permit review process relied upon emission factors drawn from the Environmental Protection Agency's (EPA's) Compilation of Air Pollution Emission Factors, fifth ed. (A.P. 42). Table 1 presents a summary of the estimated emissions from point sources, in tons per year, for the facility under this proposed permit.

Table 1: Facility Wide Uncontrolled Emissions

Pollutant	Tons per Year (tpy)
PM ₁₀	23.7
SO ₂	2.19
NO _x	42.9
CO	52.56
VOC	1.48
HAPs	3.37

IV. APPLICABLE REGULATIONS

The applicable regulations were identified by the agency as part of the permitting process. If necessary, the source is required to list any additional regulations that may be applicable. Table 2 displays the applicable requirements for each piece of equipment under this proposed permit.

Table 2: Verification of Applicable Regulations

Unit	Control Device	Rule	Verification
Dryer	None	A.A.C. R18-2-730	The dryer is fueled by sawdust, and subject to A.A.C. R18-2-730 requirements which apply to unclassified sources.
Fugitive Dust Requirements	Various	Article 6	Generation of fugitive dust is subject to this rule.
Periodic Activities	Various	A.A.C. R-18-2-726 R-18-2-727 R-18-2-1101.A.8	Abrasive blasting, spray painting and asbestos related demolition or renovation are subject to these rules.
Mobile Sources Requirements	Reasonable Precautions	Article 8	Roadway and site cleaning machinery are subject to this Article.

V. LEARNING SITES POLICY

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, the Department conducted an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools at the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

The Department did not identify any learning sites within two miles of the facility.

VI. IMPACTS TO AMBIENT AIR QUALITY

A. Introduction

The SCREEN3 model was used to complete the air dispersion modeling analysis. The SCREEN3 model was run using screening meteorology, rural dispersion coefficients, and flat terrain.

SCREEN3 is a steady state, single source, Gaussian dispersion model developed to provide an easy to use method of obtaining pollutant concentration estimates. SCREEN3 is a USEPA approved screening model for estimating impacts at receptors located in simple terrain and complex terrain due to emissions from simple sources. The model is capable of calculating downwind ground level concentrations due to point, area, and volume sources.

In addition, SCREEN3 incorporates algorithms for the simulation of aerodynamic downwash induced by buildings.

B. National Ambient Air Quality Standards Modeling Analysis Overview

Table 3 below shows the results of the NAAQS analysis for CO, NO₂, SO₂ and PM₁₀. Both pollutants are within the standards set by the NAAQS. In order to pass the 24 hour modeling analysis for PM10 the facility was required to take a daily limitation of 23 hours per day.

Table 3. NAAQS Modeling Analysis Results

Pollutant	Emissions (lb/hr)	Averaging Time	Max. Conc. (ug/m³)	NAAQS (ug/m³)	Pass/Fail?
Carbon Monoxide	12.0	1-Hr	1315.60	10,000	Pass
		8-Hr	1095.52	40,000	Pass
PM ₁₀	4.39	24-hr	148.26	150	Pass
		Annual	36.45	50	Pass
SO ₂	0.5	3-Hr	56.19	1,300	Pass
		24-hr	29.75	365	Pass
		Annual	5.45	80	Pass
NO ₂	9.79	Annual	51.71	100	Pass

VII. MONITORING AND RECORDKEEPING REQUIREMENTS

A. Boilers

1. Opacity Monitoring Requirements

The Permittee is required to conduct monthly surveys of visual emissions from the dryer stacks to be performed by a certified Method 9 observer. If the opacity of the emissions observed appears to exceed the standard, the observer is required to conduct a certified EPA Reference Method 9 observation.

B. Fugitive Dust

1. Opacity Monitoring Requirements

The permit requires monthly EPA Reference Method 9 observation of fugitive emissions by a certified Method 9 observer.

2. Recordkeeping Requirements

The Permittee is required to record the date, time, location and the results of all observations made, as well as the name of the observer who conducted the test.

In the event of opacity exceeding the limit, the Permittee must take a six-minute Method 9 observation of the plume and keep a record of the corrective action taken to bring the opacity below the standard.

VIII. LIST OF ABBREVIATIONS

A.A.C.	.....	Arizona Administrative Code
ADEQ	.....	Arizona Department of Environmental Quality
CO	.....	Carbon Monoxide
EPA	.....	Environmental Protection Agency
HAPs	.....	Hazardous Air Pollutants
H ₂ S	.....	Hydrogen Sulfide
NAAQS	.....	National Ambient Air Quality Standards
NO ₂	.....	Nitrogen Oxide
PM	.....	Particulate Matter
PM ₁₀	.....	Particulate Matter Less Than 10 Microns
SO ₂	.....	Sulfur Dioxide
tph	.....	Tons per Hour
VOC	.....	Volatile Organic Compound